SCE&G COMPLIANCE DOCUMENT

NERC Reliability Standard FAC-003-1

South Carolina Electric & Gas Company
230 kV Electric Transmission Right-of-Way Vegetation Management Program

This is a NERC Reliability Standards Compliance Procedure. This procedure contains elements addressing, in whole or in part, NERC Reliability Standards FAC-003.

Revision/Review History

Revision/Review	Date	Developed/Revised By:	Comments/Details of Revision
0	November, 2006	Jerry Lindler	Developed by SCE&G to document compliance procedures for NERC Reliability Standard
1	July 7, 2008	Jerry Lindler, Alan Brock, David Burkhalter, Sally Wofford, Matt Bullard	Updated with data retention, Purpose, Personnel Qualifications, Removed Annual Work Plan and Approval of the Manager of Transmission Planning
2	June, 2009	Jerry Lindler, Alan Brock, David Burkhalter, James Starling, RoLynda Shumpert	Updated Trimming Clearance 1 to reflect recommendation from SERC Auditors

Document Review Requirements:

Coordinating updates of this document is the responsibility of the General Manager Power Delivery Engineering. This document shall be reviewed/revised as necessary or at least annually.

References

SERC Vegetation Management Guidelines

Distribution:

Supervisor, Power Delivery ROW
Manager, Power Delivery Southern Division
Manager, Power Delivery Northern Division
General Manager, Power Delivery Engineering
Vice President, Electric Operations
Vice President, SCE&G Electric Transmission

X _____

Acknowledged by:
Supervisor Power Delivery ROW

X _____

Acknowledged by:
Manager Power Delivery Nothern Division

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Approved by:
General Manager Power Delivery Engineering

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Approved by:
Vice President, Electric Operations

X _____ 7/27/09

Approved by:
Vice President, SCE&G Electric Transmission

I. GENERAL

A. Purpose

To improve the reliability and safety of our electric transmission system by preventing outages from vegetation located on our transmission rights-of-way (ROW) and minimizing outages from vegetation located adjacent to our ROW. This will be achieved through various methods such as inspections, tree trimming, herbicide application, vegetation encroachment removal, mowing, and danger tree removal, all contingent upon local ordinances, codes, federal and state property owner issues, and other property owner issues. All work performed under this vegetation management program will be directed by the Supervisor Power Delivery ROW.

B. Personnel Qualifications

The Supervisor Power Delivery ROW is required to be a registered forester in the State of South Carolina. All other SCE&G employees involved in the vegetation management process must have a high school diploma and a valid South Carolina driver's license.

C. Data Retention

All records documenting the vegetation management plan, the annual work plan, and documents supporting the implementation thereof shall be retained for a period of 5 years.

II. METHODS

A. Tree Trimming

Both aerial and ground crews will conduct routine tree trimming along our rights-of-way. These crews will trim all vegetation back to the original trim line or easement width depending upon what is best for the tree. Tree trimming will be conducted on a rotation, which will be determined on a line-by-line basis depending upon the inspection results, right-of-way width and transmission line structure configurations.

B. Herbicide Application

We will apply herbicides to control any vegetation that might grow and interfere with our 230 kV rights-of-way. Only herbicides that are safe to the environment will be used. All herbicides will be used in accordance to the recommended rates on the label.

C. Vegetation Encroachments

Crews will maintain the rights-of-way by removing any vegetation that has grown into the R/W corridor pursuant to the reconciliation of any outstanding property owner issues. Any vegetation encroachment posing an imminent threat to the dielectric integrity of the line will be immediately removed. Vegetation encroachment schedules will be determined based on inspection results and other information from company personnel, contractors, or property owners.

D. Mowing
When the use of herbicides is not practical, we will mow the right-of-way. This will be determined by an inspection of the corridor.

E. Danger Tree Removal
Danger trees will be identified through routine aerial and ground patrols. A danger tree is a tree, on or off the R/W,that is within the fall zone of the line and is dead, diseased, or has any obvious potential risk to the system. As these trees are identified, they will be removed.

III. INSPECTIONS

Aerial Inspections will be performed over the entire 230 kV transmission system once a year except for those parts of the system that must be patrolled from the ground due to FAA regulations or other restrictions. Aerial patrols are typically performed after foliage has appeared in order to facilitate the discovery of dead trees off the right-of-way. Additional ground patrols will be performed on an as needed, or demand basis.

Additional unscheduled inspections will naturally occur as a result of other line work being conducted as a part of capital projects or other routine line hardware inspections. In all cases, upon discovering any situation that presents an immediate threat of a transmission outage, the discovering party will immediately notify the Transmission System Controller so that remedial action can be taken until the threat is resolved.

IV. TRIMMING CLEARANCES

Clearance 1 – (Clearance at the time the right–of-way maintenance is performed) – The Right-of-Way will be trimmed to the extent of the width of the right-of-way. In addition, the right-of-way floor will be maintained so that sufficient ground clearance is achieved in order to avoid violating Clearance 2 at any time during the trim cycle. Information regarding the right-of-way corridor can be found on the plan and profile construction drawings or associated right-of-way documents for each individual 230KV line. Trimming clearances for each transmission corridor will be either to the edge of the right-of-way or will be of sufficient width and clearance to satisfy the reliability requirements of the trimming cycle.

Clearance 2 – (Minimum clearance allowed at any time during the trim cycle for designed operating conditions) -- Minimum clearances allowed under all designed operating conditions, including emergency ratings for blow-out and sag, are based on IEEE 516-2003, table 5 which specifies a minimum clearance of **1.57 meters** (approximately 5.2 feet) for 230kV phase-to-ground.

V. ANNUAL WORK PLAN

230KV lines and line sections are scheduled for completion during the current calendar year as specified in the annual work plan. The annual work plan is a separate document that is updated throughout the year and is re-generated at the beginning of each year to reflect the new schedule for the upcoming year. Variances to this schedule will be noted as they occur:

A. Inspections

As indicated above, all 230 kV transmission line rights-of-way will undergo annual inspections. These will be aerial inspections except for those parts of the transmission system that cannot be flown over due to FAA regulations or other restrictions. In those cases, ground patrols will be conducted. R/W maintenance schedules may be adjusted based on inspections results and other information from company personnel, contractors, or property owners.

B. Line Trimming (see annual work plan)

C. Herbicide (see annual work plan)

D. Mowing (see annual work plan)

VI. Reporting of Vegetation-related Outages

Quarterly Reporting

SCE&G will report quarterly to SERC sustained transmission line outages determined by the Transmission Owner to have been caused by vegetation. Multiple sustained outages on an individual line, if caused by the same vegetation, shall be reported as one outage regardless of the actual number of outages within a 24-hour period.

SCE&G **is not** required to report to SERC certain sustained transmission line outages caused by vegetation:

(1) Vegetation related outages that result from vegetation falling into lines from outside the ROW that result from natural disasters shall not be considered reportable (examples of disasters that could create non-reportable outages include, but are not limited to, earthquakes,fires, tornados, hurricanes, landslides, wind shear, major storms as defined either by the Transmission Owner or an applicable regulatory body, ice storms, and floods)

(2) Vegetation-related outages due to human or animal activity shall not be considered reportable (examples of human or animal activity that could cause a non-reportable outage include, but are not limited to, logging, animal severing tree, vehicle contact with tree, arboricultural activities or horticultural or agricultural activities, or removal or digging of vegetation).

The outage information provided by SCE&G to SERC will include at a minimum: the name of the circuit(s) outaged, the date, time and duration of the outage; a description of the cause of the outage; other pertinent comments; and any countermeasures taken by SCE&G.

An outage shall be categorized as one of the following:
Category 1 — Grow-ins: Outages caused by vegetation growing into lines from vegetation inside and/or outside of the ROW.
Category 2 — Fall-ins: Outages caused by vegetation falling into lines from inside the ROW;
Category 3 — Fall-ins: Outages caused by vegetation falling into lines from outside the ROW.

SERC will report the outage information provided to it by SCE&G, quarterly to NERC, as well as any actions taken by SERC as a result of any of the reported outages.

Reference:

NERC Reliability Standard FAC-003-1